The Influence of Foreign Ownership On Capital Structure of Non-Financial Firms: Evidence from Amman Stock Exchange

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Committee Decision

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Dedication

I dedicate this thesis to my mother, Iqbal Tamimi...
You are my inspiration…

Acknowledgement

I wish to express my thanks to my supervisor, Prof. Nedal Fayoumi. This thesis would not have been completed without his expert advice and unfailing patience. Sincere thanks are extended to other committee members, Prof. Ghassan Omet, Assoc. Prof. Fayez Haddad and Prof. Hesham Gharaibeh for their time and insightful comments.

A very special acknowledgment is due to the Securities Depositary Center for providing data on foreign ownership.

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Abbreviations

ASE	Amman Stock Exchange
BSE	Bombay Stock Exchange
CEE	Central and Eastern Europe
FE	Fixed Effects
ISE	Istanbul Stock Exchange
JSX	Jakarta Stock Exchange
LM	Lagrange Multiplier
MNC	Multinational Corporation
OLS	Ordinary Least Squares
RE	Random Effects
SDC	Securities Depository Center

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Abstract

This thesis examines empirically the impact of foreign ownership on financing decisions from a corporate governance perspective. To explore the underlying relationship, we employ panel data analysis for a unique set of non-financial (services and industrial) firms listed on Amman Stock Exchange (ASE) over the period from 2005 to 2009. This study contributes to the literature by examining the effects of foreign ownership on capital structure in the emerging economies context. We provide empirical evidence indicating that foreign ownership is significantly negatively related to total leverage based on book value of assets and short-term leverage based on each of book value of assets and market value of equity, demonstrating that firms with foreign shareholdings are becoming less reliant on external cash financing. The results show that capital structure is affected by firm’s size, profitability and liquidity. The implication of this study helps financial managers and investors to have insight into the ownership composition (local and foreign) that is associated with an advantageous selection of financing modes, in accordance with the individual firm preferences.

Chapter 1: Introduction

1.1 Background

In the 1990's, foreign investments in emerging markets[1] have grown rapidly following financial and political reformations and deep structural changes, given that access to the global capital market provides some countries with lower borrowing costs for businesses and greater returns to investors. The sudden inflow of foreign capital into emerging countries has been induced by a number of factors, including an attempt to augment host country capital, technology, technical know-how proficiency, managerial capabilities and market access to a comparatively stable source of external financing. On the other side, low returns in developed markets inspired capital to search for higher growth potentials (Noorani, 2001).

Foreign ownership–is it a medium for economic growth or a threat to national companies? In a widely held view, most local businesses in developing countries are believed to welcome the contributions of foreign investors, since every business is expected to benefit from the extra capital, production technologies and new expertise that come with each investment (Singh and Jun, 1995; Baniak *et al*., 2005; Abdul Mottaleb and Kalirajan, 2010). While academics generally agree that internationalization and foreign involvement in host emerging economies has a positive effect on various aspects of firm performance (e.g. Douma *et al*., 2006; Javid and Iqbal, 2008; Arnold and Javorick, 2009), still, businesses' capital structure could be affected in an uncertain way by foreign funds. Sharma (1986) states,

The issue of the effect of foreign capital resources on economic growth of developing

[1] In this study, the author has chosen to use the World Bank's official classification when pointing to countries by their development status, in which low and middle-income economies referred to as developing countries.

> countries has continued to occupy a central position in the literature dealing with development problems in our time. However, questions asked by researchers in this respect have changed along with changes in predominant forms of capital resources available to developing countries (p. 60).

Some firms in developing countries might not realize the complexity that comes with foreign capital and their associated influences on the local market. It is frequently mentioned in financial governance literature that a capital structure of any firm arises from employing retained earnings, borrowing debt or issuing shares, hence, companies should seek the most advantageous level of each financing mode, whereby the costs are diminished and the benefits are maximized. In light of the growing liberalization the world has been seeing over the last twenty years, many developing countries are aiming to attract foreign capital flows (Adam and Tweneboah, 2009), especially at times when the local economy is experiencing unfavourable financial conditions. One of the approaches being pursued by those countries is to activate the stock market exchange role in intermediating funds toward investment projects, seeking the elevation of businesses capital and growth. While foreign portfolio investment is not a stable form of capital inflow, due to the fact that it is highly liquid and, therefore, can be quickly withdrawn from the country, it is still considered as a good alternative for obtaining capital from foreign countries.

It has been cited that the increasing number of corporations whose securities are traded on foreign exchange is rapidly blurring the distinction between domestic and international capital markets (Saudagaran, 1988). Nevertheless, according to the World Institute for Development Economic Research of the United Nations University (1990), although most developing countries have equity markets, many are embryonic or dormant. Nonetheless, stock market expansion is assumed to be a natural progression of a country’s economic and financial status. One of the key importance of international stock

ownership to investors who aspire to minimize their risk stems from their ability of driving cross-sectional variation in returns (Bartram *et al*., 2010). However, in reality, most investors hold nearly all of their wealth in domestic assets, because shareholders in each nation expect returns in their domestic equity market to be several hundred basis points higher than their returns in other markets (French and Poterba, 1991), bearing in mind the regulations and rules governed by each country which may limit the level of foreign ownership of any project.

Why would firms with higher foreign shareholdings have different financial capabilities from those with less foreign ownership? Ramachandran and Shah (1998) provide an evidence that attracting foreign ownership has a significant positive effect on firms' added value of the particular country where the stocks are being traded when foreign shareholdings exceeds a majority share. Besides, a difference in the usage of foreign debt can emerge as a result of credit scarcity level in the firm's home country (Saito and Hiramoto, 2010). The literature on corporate finance investigates the interrelationships among the many stakeholders involved in all activities of a business project and the capital structure of the operating firm. One of those interactions is the way that the firm's capital structure is responding to the stake of foreign ownership. Yet, until now a limited number of researches were published about the subject of concern of foreign ownership effects on capital structuring decisions across different economies (e.g. Fatemi, 1988; Kang and Stulz, 1997; Chen *et al*., 1997) and, so far, few have attempted to investigate the relationship in the Middle East region (e.g. Gurunlu and Gursoy, 2010). The attention by some literature was not only focused on the differences between domestic and foreign ownership, but also on differences between the foreign owned firms themselves. For example, Hake (2008) showed that the origins of foreign investors in eleven Central and Eastern European (CEE) countries do account for performance differences among foreign owned firms, explained to some

extent by the interaction between the foreign investor legal system and the legal system of the recipient country, in that investing in a country with a legal system of the same type would alleviate the amount of resources a firm should incur to adopt to the new legal and economic conditions. All in all, interestingly, variations of corporate ownership structures are assumed to vary systematically in ways that are consistent with value maximization (Demsetz and Lehn, 1985).

Since the establishment of the Amman Stock Exchange (ASE) in the 1970s, the ownership concentration of various listed firms has changed drastically. The ongoing privatization programs play an important role in shaping and adjusting ownership structures consistently in compliance with a set of rules governed by the ASE. The specific regulations on foreign investments in the exchange[2] identify particular rates of ownership not to be exceeded by non-Jordanian nationals. For example, the non-Jordanian investor ownership shall not exceed 50% of the capital of any project in the commercial activities of wholesale trade and retailing, while not to exceed 49% of the capital of any business in the scheduled and non-scheduled passenger, freight and mail air transport services. Furthermore, non-Jordanians are not allowed to own or participate, wholly or partially in a number of projects and activities outlined by the regulations of foreign investments, such as those related to security and investigation services. The Jordanian government still holds a large stake of firms operating in media, utility, energy, steel, mining and heavy engineering businesses since they are all considered to be strategic industries (Zeitun, 2009).

Table 1 presents the percentages of ownership concentration classified in accordance with the investor's nationality, grouped into Jordanian, Foreign Arab and Foreign Non-Arab investors.

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[2] Amman Stock Exchange, 2011

Table 1. Percentages of ownership concentration according to nationality

Year	Jordanian		Foreign Arab		Foreign Non-Arab	
	Services	Industrial	Services	Industrial	Services	Industrial
2005	87.09	75.22	11.06	12.61	1.86	12.17
2006	84.84	70.82	12.53	14.24	2.63	14.94
2007	80.23	68.95	15.93	16.45	3.85	14.60
2008	79.35	68.18	17.68	17.02	2.97	14.80
2009	81.37	67.73	15.81	17.49	2.81	14.78

Source: Securities Depository Center, 2011

It is obvious from Table 1 that the majority of foreign ownership is possessed by investors of Arab nationals. In particular, statistics from Securities Depository Center (SDC) show that the mainstream of foreign ownership in Jordan comes from Saudi Arabian, Kuwaiti and Lebanese nationals, respectively. This study is based on data from 92 listed non-financial firms, which has been hand-collected and verified for the period from 2005 to 2009. The ASE is the main source of financial data, and the SDC of ownership composition (i.e. domestic vs. foreign ownership). We aim at examining the effect of foreign ownership on capital structures for a sample of Jordanian services and industrial firms.

1.2 Problem Statement

Statistics from the ASE demonstrate that the average volume of non-Jordanian ownership in all shareholding companies during the period starting from January 2005 to December 2009 amounted to approximately 48% of the total market capitalization. This percentage reflects the important role played by foreign investors through investing in existing equity. Yet, it is still questionable whether foreign stock ownership would help in balancing the capital structure of Jordanian firms, which have been found to have target leverage ratios, and adjust to them relatively fast (Maghyereh, 2005). Accordingly, this research extends Maghyreh's argument by questioning whether targeted leverage ratios are affected by the presence of foreign ownership. The core research problem of this study revolves around finding out

whether or not foreign ownership affects the capital structure of firms in an emerging economy, to help financial managers address issues may impact the quality of decisions taken on corporate finance. This can be articulated through seeking an answer for the question: 'Is there any relation between the ratio of foreign ownership and leverage measures of capital structure?'

1.3 Objectives of the Study

There are two main objectives underlying this thesis. The first objective is to determine whether and to what extent does foreign ownership affect capital structures of Jordanian services and industrial firms. Based on panel data analysis, we will assess the impact of foreign shareholding on capital structure using the relationships between foreign ownership and book leverage and market leverage based on total and short-term liabilities, respectively. The second objective is to examine the impact of control variables, proved to be important in corporate financing decisions, on Jordanian services and industrial firms' capital structures. Those variables include firm size, return on assets, non-debt tax shield, tangibility, capital expenditures and liquidity.

1.4 Research Significance

One of the motivations of this research is to challenge the assumption that owners from different origins constitute a homogeneous unit. Noting that the percentage of foreign ownership in Jordanian listed firms has been seeing an obvious increase in the last few years as presented in Table 2, it would be interesting to find out whether the foreign investors, who are expected to have different needs, preferences and power strengths from those of the local investor, will affect the capital structure of the Jordanian market differently. The motivation for this study is to discover whether or not foreign investors provide a better capital structuring choices and corporate financing decisions to services and industrial firms in

Jordan. The main contribution of this study is to provide valuable knowledge of cross-border stock ownership as a determinant for capital structuring in the context of the Middle East region in general, and of Jordanian services and industrial firms in particular. The findings of this study may provide valuable insights on the governance of corporate financing, which importance stems from capturing the potential gains the underlying firms may achieve by seizing proper decisions in regards to capital structuring.

Table 2. Percentages of foreign ownership in the shareholding companies

Year	Services sector	Industrial sector	General
2005	26.19	38.09	45.04
2006	36.55	43.71	45.53
2007	36.15	51.88	48.95
2008	33.81	53.35	49.25
2009	33.12	53.13	48.73

Source: Amman Stock Exchange, 2011

1.5 Structure of the Thesis

The structure of the thesis is as follows. In Chapter 2, we shall survey the most relevant literature in the area of ownership configuration in general, and foreign ownership in particular, as a significant determinant of capital structure. The chapter starts with a general discussion on ownership structure as an important factor influencing corporate financing decisions, then we extend our discussion with the specific relationship a firm's capital structure has with foreign ownership. The last part provides a comprehensive review into relevant research so as to emphasize the rationale of our study. Chapter 3 initiates our empirical work. First, the data and sample are described. In the analysis, we use financial and ownership data of listed services and industrial firms, collected from ASE and SDC databases. After that, the empirical model and proxies variables are defined. Further, a basic conceptual framework model is designed to postulate the relationships between foreign ownership, along control variables, and various leverage measures. The chapter ends by

setting the statistical analysis methods used in our work. In Chapter 4, we discuss the results obtained from the application of the adopted statistical methods to test the set of hypotheses presented in the chapter before. Finally, Chapter 5 provides the conclusion and specific recommendations of the thesis.

Chapter 2: Literature Review

The Modigliani and Miller theory (1958) forms the foundation for modern thinking on capital structure, though it assumes away many important factors in capital structuring decisions. The theorem states that, in a perfect market, how a firm is financed is irrelevant to its value. Hence, if capital structure is irrelevant in a perfect market, then imperfections, which exist in the real world, must be the cause of its relevance. Several theories tried to address some of these imperfections by relaxing assumptions made in the Modigliani and Miller theory; a number of which focused on the issue of ownership compositions as a determinant of capital structures. This chapter summarizes the literature on the relationship between ownership structure and capital structure with special emphasis on the role of foreign shareholders.

2.1 Ownership Structure and Capital Structure

Most of the empirical research on the relationship between ownership and capital structures has been conducted using data from industrialized economies (e.g. Kester, 1986; Kang and Stulz, 1997; King and Santor, 2008), yet, there are some research that has been done on few developing countries such as China (e.g. Huang and Song, 2006; Su 2010), India (e.g. Manos *et al*., 2007) and Jordan (e.g. Al-Najjar and Taylor, 2008; Al-Fayoumi and Abuzayed, 2009). Different agency-cost related theories emerged that can help in relating a firm’s ownership structure to its capital structure. Previous studies on capital structure have basically operationalized the agency problem in terms of insiders, institutions and large blockholders (Agrawal and Knoeber, 1996; Seifert *et al*., 2005; Al-Fayoumi and Abuzayed, 2009). Jensen and Meckling (1976) study the roles of owner-managers, outside equity holders and outside debt holders, focusing on the potential costs resulting from divergence of interests among them. The researchers point out that asset substitution problem occurs when

shareholders prompt a firm to undertake risky projects, while increasing the risk that bondholders will bear due to the increased risk of bankruptcy, and thus resulting in wealth transfer from bondholders to stockholders. Similarly, the underinvestment problem, proposed by Myers (1977), occurs when a company rejects investing in low-risk assets in order to maximize the shareholders' wealth at the cost of that for debt holders, since the latter group is not compensated for the additional risk.

Prior empirical research on the relationship between managerial shareholdings and leverage provides complex findings (Al-Fayoumi and Abuzayed, 2009). The basic intuition views managers to normally have preferences to keep debt at low levels as a means for acquiring greater discretion over the use of excess cash and reducing the probability of bankruptcy (Florackis and Ozkan, 2009). A number of studies confirm the negative association (e.g. Friend and Lang, 1988; Bathala *et al*., 1994; Firth, 1995; Short *et al*., 2002; Hardjopranoto, 2006). There is a perspective suggesting that offering managers with more option plans aligns managers' interests with those for shareholders, and thus debt levels will be amplified (Smith and Watts, 1982; Mehran, 1992). Jensen (1986) argues in his free cash flow theory that increasing debt issuance imposes financial discipline on management, in that unless free cash flow is given back to investors, management has an incentive to destroy firm value through growing the particular firm beyond its optimal size and by financing projects earning low returns. Hence, debt is found to limit agency costs by reducing both the current and future funds at the manager's discretion (Byrd, 2010). Agrawal and Nagarajan (1990) found that all-equity firms exhibit greater equity ownership by top managers with more extensive family involvement in corporate operations than levered firms. Their evidence considers that managerial choice of an all equity capital structure may be aimed at reducing the

risk associated with large non-diversifiable investments of personal wealth and family human capital in those firms.

Concentration of ownership by parties other than a firm's management, whether by individuals or institutions, is supposed to spur the monitoring capacity of the blockholder. Brailsford *et al*. (2002) provide support for a positive relation between external blockholders and leverage, and suggest that this correlation varies across the level of managerial ownership. Moreover, Chaganti and Damanpour (1991) show evidence that the size of outside institutional stockholdings has a significant impact on a firm's capital structure. Nevertheless, Holderness and Sheehan (1988) state that large blockholders or their representatives almost always serve as directors or officers in the firm where they invest, thus their ownership should be included to that for managers. At last, Stulz (1999) believe that the cost of equity capital decreases because of the growing globalization for two important reasons; first, the expected return that investors require to invest in equity to compensate them for the risk they bear generally falls, and second, the agency costs which make it harder and more expensive for firms to raise funds become less important.

2.2 Linkage between Foreign Ownership and Capital Structure

Do the specific financial and business characteristics of foreign ownership affect a firm's capital structure? Researchers debated on the question of why foreign ownership may matter when corporate financing decisions are being made. Csermely and Vincze (2000) focused on the role of foreign equity ownership as a signaling device to indicate the firm's credit-worthiness, affirming the hypothesis according to which attracting foreign equity capital relatively early in the transition process may result in relaxing the borrowing constraint for enterprises. It has been cited also that nationally shared preferences for certain firm characteristics and ownership setting help predict leverage

decisions above and beyond the individual firm-level effects, which are directly influenced by three specific cultural values of embeddedness, mastery, and uncertainty avoidance (Griffin *et al*., 2009). Kang and Stulz (1997) argue that foreign investors overweight shares of firms in manufacturing industries, large firms, firms with good accounting performance, firms with low unsystematic risk and most importantly, firms with high leverage, whereas Ko *et al.* (2007) find that foreign investors have a clearer preference for stocks with large capitalization and low book-to-market ratios relative to institutional investors.

Theoretical expectations imply that the international diversification of earnings should decrease the variability of cash flows and bankruptcy costs and these, in turn, enable multinational firms to sustain higher leverage than domestic ones (Gurunlu and Gursoy, 2010). Hussain and Nivorozhkin (1997) affirm that foreign-owned firms on average exhibit a significant higher debt ratio than their domestically owned counterparts in the host country, and that the gap in the debt ratio increases with the host country's statutory corporate tax rate (Egger *et al.*, 2010). On the other extreme, other empirical studies report a negative relationship between ownership by foreign investors and leverage measures (Kocenda and Svejnar, 2002; Li *et al*., 2009), emphasizing on the influence of environmental factors on the agency costs (Lee and Kwok, 1988). Furthermore, Mieno (2009) and Gurunlu and Gursoy (2010) explain that firms with more shares held by foreign owners tend to have lower leverage because these firms generally hold higher retained earnings, and thus dependent on self-financing. The evidence also does support that stock ownership by foreign shareholders is associated with higher dividend payouts and lower levels of investments in capital projects (Gedajlovic *et al.*, 2005).

2.3 Relevant Research

In this section, we review relevant research directed at our subject of concern, and performed on data gathered from the emerging economies–Indonesia, China, India and Turkey. One of the relevant attempts to examine the effects of foreign ownership on capital structure is the empirical study of Chevalier *et al*. (2006), originated from questioning whether foreign ownership participation makes corporate governance practices better in developing countries. In an effort to answer this question, the focus was centered on capital structure choices undertaken by a sample of 278 Indonesian non-financial firms listed on Jakarta Stock Exchange (JSX) during the period from 1994 to 2004. The study finds that multinational corporations (MNCs) are essentially more prudent in their financing policies. In particular, MNCs are found to be less beholden to total and short-term debt than local firms do, noting that in Indonesia most firms prefer short-term debt by neglecting the cautious financing policies. Those results have been viewed to be consistent with many arguments considering MNCs as agents of transformation in diffusing specific assets, knowledge and culture, including governance practices, in developing countries.

A further study contributed to the literature in the area under discussion is that presented by Li *et al*. (2009). The researchers examined the role of ownership structures in determining capital structure decisions of non-publicly traded Chinese firms using 417,068 firm-year observations for the sample period from 2000 to 2004. The study finds that foreign ownership is negatively associated with all investigated leverage measures (book leverage, long-term debt and short-term debt) due that foreign-owned firms are subject to lower corporate tax rates than their domestically-owned counterparts. Further, the findings show that state ownership is positively associated with leverage and firm’s access to long-term debt. These results on state ownership are

found to be consistent with the Chinese government's dual role as the majority shareholder of state-owned enterprises as well as the owner of all major banks.

The study of Majumdar (2010) examines the relationship between the extent of foreign ownership and debt composition using a sample of 1,026 firms listed on Bombay Stock Exchange (BSE) for the period from 1988 to 1993. The key finding of the study reveals foreign ownership as an advantage in the context of firms' fund-raising activities from the debt market, which is the largest source of funds for firms operating in India. This result arose from the fact that firms with foreign ownership borrow relatively less from commercial banks, which typically lend more expensive unsecured short-term funds, in addition to that those firms do enjoy relatively greater access to funds from development finance institutions. One more relevant research carried out by Gurunlu and Gursoy (2010) discussed the effect of foreign ownership on long book and market leverages of 143 non-financial firms listed on Istanbul Stock Exchange (ISE). The researchers aimed to test the determinants of capital structure in a developing country conjecture with its different market imperfections and information asymmetries. The results found that foreign ownership is significantly negatively related to long-term debt; justified by that Turkish firms attracting foreign direct investments acquire sufficient internal funding, and thus they do not need more debt financing to fund their capital expenditures. Additional findings include that firm size, tangibility, capital expenditure ratio, profitability and liquidity are all approved to be significant determinants of long-term leverage.

Since there is a limited published literature that considers the exact relationship between foreign shareholdings and capital structures of firms in developing countries, therefore, it is motivating to explore the relationship between the Jordanian firms' ownership structure and the associated capital structure assuming equity ownership is

divided into foreign and local. If such relationship has been confirmed to exist, it would be useful to find out the strength of such association, taking into consideration that most of studies on capital structuring do not highlight the financing decisions preferences taken by the local businesses under foreign ownership.

Chapter 3: Research Methodology

The objective of chapter 3 is to develop a theoretical framework able to support the formulation of testable hypotheses suggested in this study. To test the effects of foreign ownership on total and short-term leverages of Jordanian services and industrial listed firms, we build on Gurunlu and Gursoy's (2010) model of foreign ownership influence on long-term book and market leverages. The model is based on the argument that there is a relationship between the proportion of ownership held by foreign investors and a firm's book and market leverages level.

3.1 Data and Sample

Research population consists of all Jordanian services and industrial firms listed on ASE during the period 2005 to 2009. The entire population for the underlying period consists of 142 firms, of which 63 firms are operating in the services sector and 79 in the industrial sector. The reason for choosing the year 2005 as a starting point is because foreign ownership data are only available starting from the same year only. Following literature, we exclude in this study financial firms and institutions listed under the financial sectorial specification (banks, insurance companies, diversified financial services firms and real estate companies) since foreign ownership and financial data of those firms are expected to have different structures from those of non-financial firms. The sample is reduced to those companies that have both foreign ownership and financial data for at least the last successive three years. We drop observations for delisted firms, firms suspended the trading on shares at any point of time and firms with missing foreign ownership or financial data. After applying the various filters described, we include only firms with data that fall between plus and minus 3 standard deviation limits from the mean of key control variables. The sample is left with 92 firms (440

observations) representing approximately 62% out of the total number of original observations. The initial sum of services and industrial firms are reduced to 40 and 52 firms, representing roughly a percentage of 59% and 65% of the total initial observations, respectively. In appendices A and B, we report the list of services and industrial firms complied with our sample rules, hence included in our study. Main sources of data on financial variables used in this study are derived from the financial statements incorporated in the ASE database, whereas ratios of foreign ownership have been gleaned from SDC, and whenever needed, original financial statements were referred to.

3.2 Empirical Models and Proxies Variables

In this research, we utilize two main alternative measures of capital structure; the ratio of liabilities to the book value of assets (book leverage) and the ratio of liabilities to the market value of assets (market leverage). Theoretically, there are three ways to measure leverage ratios; total liabilities to total assets, long-term liabilities to total assets and short-term liabilities to total assets. Rajan and Zingales (1995) believe that the most suitable debt ratio relies on the purpose of the analysis preferred. Following the study of Cheng *et al*. (2010) conducted in the context of China, we suggest that decomposing total leverage into short-term leverage and long-term leverage for publicly-listed Jordanian firms may not be desirable for the following reasons; first, there is an approved evidence from literature that firms in emerging countries rely excessively on short-term liabilities (Rajan, 1992; Diamond, 1993; Demirguc-Kunt and Maksimovic, 1999; Broner *et al*. 2007), and second, short-term liabilities are the majority of total liabilities for most Jordanian services and industrial firms. The scales of capital structure resulting from our procedure include total book leverage (T/BLEV), total

market leverage (T/MLEV), short-term book leverage (S/BLEV) and short-term market leverage (S/MLEV). There are two groups of explanatory variables to be examined. The first group consists of the key independent variable of foreign ownership (FRGN), and the second group consists of control variables, all of which have been suggested in the literature. Those are: firm size (SIZE), return on assets (ROA), non-debt tax shield (NDTS), tangibility (TNG), capital expenditures (CAPEX) and liquidity (LIQ).

3.2.1 Dependent Variables

Book Leverage (T/BLEV, S/BLEV) and Market Leverage (T/MLEV, S/MLEV)

The dependent variables include the two main measures of capital structure, which are book leverage and market leverage. A distinction between the two measures in favour of book leverage is that the ratio of debt to the book value of assets reflects assets already in place, in contrary with market leverage which is accounted for by assets not yet in place (i.e. by the present value of future growth opportunities) (Myers, 1977). Opposing book leverage, market leverage is forward looking, in that it reflects future predictions (Frank and Goyal, 2009). Koller *et al*. (2010) argue that if market leverage was very high in combination with strong current interest coverage, this could indicate the possibility of future difficulties in sustaining current debt levels. Sub measures of book and market leverages include those based on total and short-term liabilities. Book leverage measures are calculated as a ratio of total (short-term) liabilities divided by the summation of total liabilities and book value of assets, whereas market leverage measures are calculated as a ratio of total (short-term) liabilities divided by the summation of total liabilities and market value of equity

3.2.2 Explanatory Variable

Foreign Ownership (FRGN)

The main explanatory variable this research aims to investigate is foreign ownership (FRGN). For our research purposes, foreign ownership is defined as the percentage of shares owned by foreign shareholders. On the relationship between foreign ownership and capital structure, there are two fundamentally different views on the influence of a firm's foreign ownership o capital structure. First, there is a perspective that foreign shareholding can impose a positive influence on debt borrowing (Hussain and Nivorozhkin, 1997; Egger *et al.*, 2010), because diversification of stock listing decreases both possible inconsistency of cash flows and bankruptcy costs and thus, enables the firm to sustain higher leverage. The other perspective, and the more prominent one, views a negative impact of foreign ownership on leverage (e.g. Kocenda and Svejnar, 2002; Li *et al*., 2009). Lee and Kwok (1988) highlighted the influence of environmental factors on the agency costs in proving the negative association, while Mieno (2009) and Gurunlu and Gursoy (2010) suggest that foreign ownership is associated with lower leverage due to that firms attracting foreign ownership tend to have sufficient internal funding and do not need more debt financing to fund their capital expenditures compared to domestic firms.

3.2.3 Control Variables

The impact of foreign ownership on capital structure will be examined in light of the presence of other control variables expected to affect the direction and/or the strength of the relation. These include: size (SIZE), return on assets (ROA), non-debt tax shield (NDTS), tangibility (TNG), capital expenditure (CAPEX) and liquidity (LIQ).

Size (SIZE)

There are a number of channels by which firm size shown to interact with book and market leverages to affect a firm's capital structure. For the static trade-off approach, the larger the firm, the greater the possibility it has of issuing debt (Hijazi and Tariq, 2006). Though empirical studies do not provide a unified judgment regarding the effect of size on leverage, most researchers agree on a positive relationship between the two variables (e.g. Friend and Lang, 1988; Chang and Rhee, 1990; Harris and Raviv, 1991; Huang and Song, 2006). Neverthless, Titman and Wessels (1988) suggested that firm size is related to book leverage but not market leverage. Business size also tends to maintain a positive relationship with financial leverage of small businesses (Lopez-Gracia and Sanchez-Andujar, 2007). Nevertheless, Byoun (2007) believe that small firms tend to have lower leverage ratios not because of internally generated funds as implied in the picking order theory, but because of additional equity financing. Interestingly, findings of different studies indicate that the environment or country where data are being collected intermediates the relationship. For example, firm size is positively related to book leverage for firms in the United Kingdom (Ozkan, 2001) and Japan (Mahmud, 2003), but is negatively related to book leverage for Nigerian firms (Ezeoha, 2008). We measure firm size as the natural logarithm of total assets.

Return on Assets (ROA)

In this study, we use return on assets as a measure of profitability. Rao (1989) documents a negative association between profitability and debt to equity ratio, explained by that an increase in profitability due to small interest payments on debt causes a decrease in leverage. Antoniou *et al*., (2008) affirms that the leverage ratio declines with the increase of a firm's profitability, and finds that the degree and effectiveness of profitability as a determinant is

dependent on the country's legal and financial traditions. Moreover, the impact of profitability on leverage differs substantially across industries (Degryse *et al.*, 2009).

Non-Debt Tax Shield (NDTS)

Non-debt tax shield could be depreciation or amortization, or any other tax-benefit expense other than debt interest. DeAngelo and Masulis (1980) argue that the presence of corporate tax shield substitutes for debt such as accounting depreciation, depletion allowances and investment tax credits is shown to imply a market equilibrium in which each firm has a unique interior optimum leverage decision. This negative association between non-debt tax shields and leverage has been confirmed in a large number of studies (e.g. Bradley *et al.*, 1984; Huang and Song, 2006; Mazur, 2007). In this study, we calculate non-debt as depreciation expense scaled by total assets.

Tangibility (TNG)

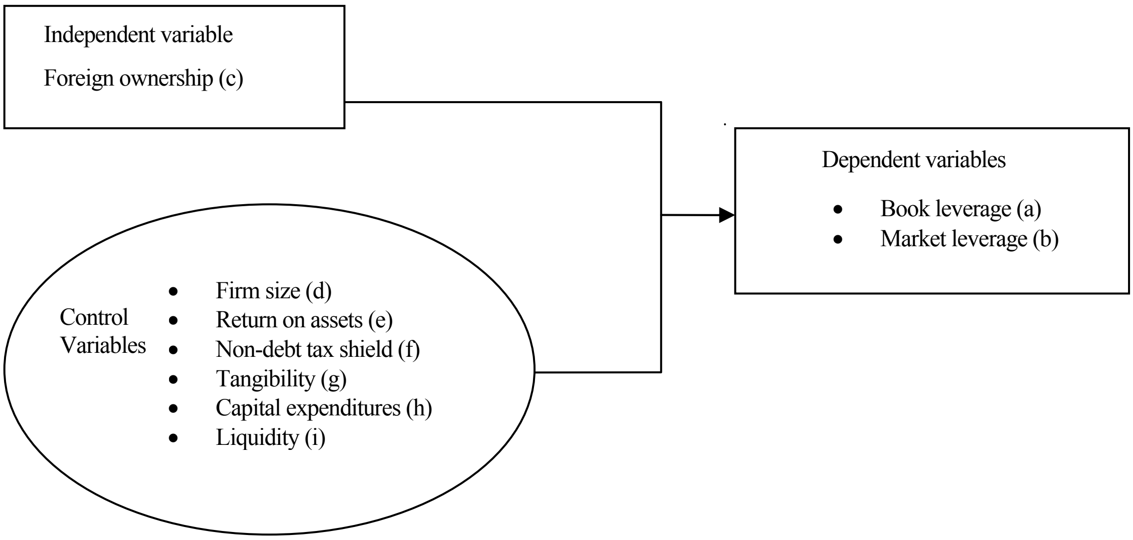
The propositions of the trade-off theory (Kraus and Litzenberger, 1973) suggest that tangible assets insert a positive impact on debt borrowing decisions since they have value in case of bankruptcy, in contrast to intangible ones. A number of studies proposed the same idea according to which tangibility increases borrowing capacity because it allows creditors to use tangible assets as collateral (Harris and Raviv, 1991; Rajan and Zingales, 1995). While most literature have supported a positive association between tangibility and leverage (Alti, 2006; Bougatef and Chichti, 2010; Gurunlu and Gursoy, 2010), Sheikh and Wang (2010) document in their study conducted on Pakistani textile firms a negative relationship between the two variables, which is suggested to be due to the profound dependence of textile firms on short-term debt. This research uses the ratio of fixed assets to total assets to measure tangibility.

Capital Expenditures (CAPEX)

Capital expenditures are expenditures creating prospective benefits, and they are normally used to measure an investment's level of growth. If a firm has profitable projects, theoretically, it is assumed to depend on debt financing to grow irrespective of the amount borrowed. However, because of the imperfect market in the real world, external funding tends to be higher than internal funding, which possibly may make the firm reluctant to be backed by external sources of debt. Empirical evidence by Long and Malitz (1983) and Gurunlu and Gursoy (2010) supports a positive relationship between capital expenditures and book leverage. We calculate capital expenditures through subtracting net fixed assets for the previous year from net fixed assets for the current year plus depreciation all divided by total assets.

Liquidity (LIQ)

Diamond (1991) shows that firms with high credit ratings, that is with high potential ability to repay debt, prefer short-term debt, and those with lower ratings prefer long-term debt, but still, lower rated firms can issue only short-term borrowings. Moreover, Islam (2009) concluded that there is a positive association linked between a firm's liquidity and its ability to response to leverage shocks quickly. In this study, liquidly is measured as a ratio of current assets to current liabilities. Arising from the preceding discussion, we build in Figure 1 the research model depicting the relationships among factors that are believed to affect the capital structure of Jordanian services and industrial firms, bearing in mind that our center of attention in this study is to find out whether and to what extent does foreign ownership influence book and market leverages based on total and short-term liabilities.



Source: Adapted from Jiang, 2007

Figure 1: Research Model

3.3 Research Hypotheses

Based on the preceding discussion, we formulate the following hypotheses on the relationship between foreign ownership and different leverage measures,

H1: Percentage of foreign ownership has no statistically significant effect on total/ short-term book (market) leverage.

H2: Firm size has no statistically significant effect on total/ short-term book (market) leverage.

H3: Return on assets has no statistically significant effect on total/ short-term book (market) leverage.

H4: Non-debt tax shields have no statistically significant effect on total/ short-term book (market) leverage

H5: Tangibility has no statistically significant effect on total/ short-term book (market) leverage.

H6: Capital expenditures have no statistically significant effect on total/ short-term book (market) leverage.

H7: Liquidity has no statistically significant effect on total/ short-term book (market) leverage

3.4 Research Models

The following regression models developed to test the set of hypotheses outlined in the previous section,

$$T/BLEV_{it}\ (T/MLEV_{it}) = \beta_0 + \beta_1 FRGN_{it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 NDTS_{it} + \beta_5 TNG_{it} + \beta_6 CAPEX_{it} + \beta_7 LIQ_{it} + \varepsilon_{it} \qquad (1)$$

$$S/BLEV_{it}\ (S/MLEV_{it}) = \beta_0 + \beta_1 FRGN_{it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 NDTS_{it} + \beta_5 TNG_{it} + \beta_6 CAPEX_{it} + \beta_7 LIQ_{it} + \varepsilon_{it} \qquad (2)$$

where $T/BLEV_{it}$ ($T/MLEV_{it}$) is book (market) leverage based on total liabilities defined as a ratio of total liabilities to the summation of total liabilities and book value of assets (market value of equity), $S/BLEV_{it}$ ($S/MLEV_{it}$) is book (market) leverage based on short-term liabilities defined as ratio of short-term liabilities to the summation of total liabilities and book value of assets (market value of equity), $FRGN_{it}$ is foreign ownership as a percentage of shares owned by foreign shareholders, $SIZE_{it}$ represents size of firm, and measured by natural logarithm of total assets, ROA_{it} is return on assets used as a proxy for profitability level. $NDTS_{it}$ denotes non-debt tax shields, calculated as depreciation expense scaled by total assets to measure non-debt tax shield, TNG_{it} is tangibility as a ratio of fixed assets to total assets, $CAPEX_{it}$ is capital expenditures calculated through subtracting net fixed assets for the preceding year from net fixed assets for the current year plus depreciation all scaled

by total assets, and LIQ_{it} denotes liquidity as a ratio of current assets to current liabilities, all the previous are of firm i in year t.

3.5 Statistical Analysis Methods

Methodologically, we built on the multivariate regression models developed by Gurnulu and Gursoy (2010) in which foreign ownership is being used as the primary explanatory variable to examine the influence of foreign ownership on book and market leverage levels. Ordinary Least Squares (OLS), Fixed Effect (FE) and Random Effect (RE) regressions are employed in this research, and the best model will be chosen to interpret results according to each model's ability to improve the efficiency of estimates parameters. The RE and FE regressions are used to control the individual firm effects; FE allows us to control for time invariant unobserved individual firm characteristics that can be correlated with the observed independent variables, and RE model treats the individual firm effects as disturbance. In order to determine the most appropriate model, we employ two-layer diagnostic procedure. First, the Lagrange Multiplier (LM) test of Breusch and Pagan (1980) is used to compare OLS estimation against FE and RE models. Second, we perform the Hausman (1978) specification test to contrast RE model against FE model. The initial model for analyzing panel data is the OLS.

Chapter 4: Results and Discussion

4.1 Introduction

The objective of this chapter is to test the research hypotheses illustrated in chapter 3. We initially present a descriptive statistics for all research model variables, then we use Pearson correlation matrix to have a general view into the degree of association between all pairs of data sets, and finally three regression criterions are employed to estimate the impact of foreign ownership and other control variables on non-financial Jordanian firms' capital structures. These criterions include Ordinary Least Squares (OLS), Fixed-Effects (FE) and Random-Effects (RE).

4.2 Summary Statistics

Table 3 below reports summary statistics for the variables used in this study.

Table 3. Descriptive statistics

	Mean	SD	Median	Minimum	Maximum
T/ BLEV	0.3387	0.2096	0.3076	0.0044	0.9197
T/MLEV	0.2747	0.1986	0.2268	0.0024	0.8581
S/BLEV	0.2599	0.1671	0.2373	0.0044	0.8577
S/MLEV	0.2120	0.1598	0.1730	0.0024	0.7593
FRGN	0.1886	0.2055	0.1320	0.0010	0.9850
SIZE	16.9353	1.1646	16.8005	14.6550	20.3550
ROA	0.0441	0.0705	0.0500	–0.2270	0.2940
NDTS	0.0321	0.0344	0.0270	0.0000	0.5500
TNG	0.4059	0.2549	0.3700	0.0040	0.9730
CAPEX	0.0423	0.0986	0.0220	–0.4640	0.7460
LIQ	2.3740	2.1549	1.6650	0.0000	12.3600

Note: T/BLEV (T/MLEV) is book (market) leverage based on total liabilities, defined as a ratio of total liabilities to the summation of total liabilities and book value of assets (market value of equity), S/BLEV (S/MLEV) is book (market) leverage based on short-term liabilities, defined as a ratio of short-term liabilities to the summation of total liabilities and book value of assets (market value of equity), FRGN is foreign ownership as a percentage of shares owned by foreign shareholders, SIZE represents size of firm measured as the natural logarithm of total assets, ROA is return on assets used as a proxy for profitability level, NDTS denotes non-debt tax shields calculated as depreciation expense scaled by total assets, TNG is tangibility as a ratio of fixed assets to total assets, CAPEX is capital expenditures calculated through subtracting net fixed assets for the preceding year from net fixed assets for the current year plus depreciation all scaled by total assets, and LIQ denotes liquidity as a ratio of current assets to current liabilities. SD denotes standard deviation.

By examining the descriptive statistics for capital structure determinants examined in this study, and for the key influential factor of foreign ownership for the entire sample of Jordanian services and industrial firms, we can make the following observations. First, based on total book and market leverage measures (T/BLEV and T/MLEV), the reported mean ratios are found to be relatively low to what is generally observed in other emerging markets. For example, our resulted mean book leverage based on total liabilities of approximately 0.34 for Jordanian services and industrial firms is much lower than the 0.62, 0.46 and 0.58 documented for a sample of Chinese, Pakistani and Omani firms, respectively (see table 4). We obtain the same observation when we measure the mean market leverage ratio based on total liabilities. Examples from developing countries include a mean market leverage of 0.60 and 0.44 documented for Indonesian and Omani non-financial firms by Chevalier *et al.* (2006) and Sbeiti (2010).

Table 4. Total book leverage in a sample of emerging markets

Country	Firm specification	Period	Citation	T/BLEV (1)	T/BLEV (2)
Brazil	Listed non-financial MNCs	2004-2008	Saito and Hiramoto (2010)		0.24
China	Foreign-invested toy manufacturing	2002	Mok *et al*. (2007)	0.62	
	Unlisted manufacturing	2000-2004	Li *et al*. (2009)	0.57	
	Listed real-estate	1991-2007	Li (2010)	0.52	
Indonesia	Listed non-financial	1994-2004	Chevalier et al. (2006)		0.67
Jordan	Listed non-financial	1996-2001	Omet and Mashharawe (2004)	0.38	
	Listed industrial	2001-2005	Al-Fayoumi and Abuzayed (2009)		0.35
Libya	Public and private	1995-1999	Buferna et al. (2005)		0.54
Nigeria	Listed non-financial	1990-2004	Salawu (2007)		0.66
Oman	Listed non-financial	1996-2001	Omet and Mashharawe (2004)	0.46	

Table 4. Total book leverage in a sample of emerging markets (con't)

Country	Firm specification	Period	Citation	T/BLEV (1)	T/BLEV (2)
Pakistan	Listed operating in the energy sector	2001-2005	Saeed (2007)	0.58	
Saudi Arabia	Listed non-financial	1996-2001	Omet and Mashharawe (2004)	0.26	
	All listed except banks	1998-2005	Sbeiti (2010)		0.29
Slovenia	All firms	1999-2006	Crnigoj and Mramor (2009)	0.60	

Notes: T/BLEV (1) is equal to total liabilities divided by book value total assets. T/BLEV (2) is equal to total debt divided by book value of total assets. Slovenia is a graduated developing economy, from 2007 is considered as developed.

The average value for short-term book leverage of 0.26 and short-term market leverage of 0.21 constitute more than three fourth of the associated total leverage of 0.34 and 0.27 respectively. The substantially high amounts of book and market leverage ratios based on short-term liabilities reflect the fact that Jordanian firms operating in non-financial sectors are mainly dependent on short-term borrowings to fund their operations. Additionally, the average percentage of foreign shareholdings of 0.19 derived from of approximately 18.14 percent of foreign shareholdings in the services sector, and 18.19 percent of foreign shareholdings in the industrial sector (untabulated) implies that for Jordanian non-financial firms, foreign investors represent only less than one fifth of the full ownership shares.

4.3 Pearson Correlation Matrix

We compute the Pearson correlation coefficients to determine the most significant factors in the list of hypothesized independent variables that are affecting book and market leverages. Table 5 reports the correlation matrix between all included variables in our research models (equations 1 and 2).

Table 5. Correlation matrix

	T/BLEV	T/MLEV	S/BLEV	S/MLEV	FRGN	SIZE	ROA	NDTS	TNG	CAPEX	LIQ
T/BLEV	1										
T/MLEV	0.885**	1									
S/BLEV	0.773**	0.677**	1								
S/MLEV	0.686**	0.817**	0.875**	1							
FRGN	0.151**	0.148**	0.151**	0.145**	1						
SIZE	0.340**	0.244**	0.243**	0.170**	0.222**	1					
ROA	–0.186**	–0.340**	–0.134**	–0.297**	0.064	0.203**	1				
NDTS	–0.144**	–0.155**	–0.129**	–0.139**	–0.141**	–0.053	–0.032	1			
TNG	–0.073	–0.093	–0.195**	–0.197**	–0.144**	–0.012	–0.035	0.368**	1		
CAPEX	0.025	–0.023	0.025	–0.025	–0.012	0.069*	0.139**	0.094*	0.301**	1	
LIQ	–0.462**	–0.404**	–0.488**	–0.426**	–0.101*	–0.290**	0.092	0.031	–0.255**	–0.110*	1

Note: T/BLEV (T/MLEV) is book (market) leverage based on total liabilities, defined as a ratio of total liabilities to the summation of total liabilities and book value of assets (market value of equity), S/BLEV (S/MLEV) is book (market) leverage based on short-term liabilities, defined as a ratio of short-term liabilities to the summation of total liabilities and book value of assets (market value of equity), FRGN is foreign ownership as a percentage of shares owned by foreign shareholders, SIZE represents size of firm measured as the natural logarithm of total assets, ROA is return on assets used as a proxy for profitability level, NDTS denotes non-debt tax shields calculated as depreciation expense scaled by total assets, TNG is tangibility as a ratio of fixed assets to total assets, CAPEX is capital expenditures calculated through subtracting net fixed assets for the preceding year from net fixed assets for the current year plus depreciation all scaled by total assets, and LIQ denotes liquidity as a ratio of current assets to current liabilities. ** and * indicate significance at the 1 and 5% levels, respectively.

Based on the correlation matrix, book and market leverage ratios based on total and short-term liabilities are all positively significantly correlated with foreign ownership at the 1% level. Another observation is that all capital structure measures are positively correlated with firm size at the 1% level of significance. Such strong association reveals the important role firm size plays in determining capital structure compositions of Jordanian non-financial firms. Further, at the 1% level, book and market leverages based on both short and total liabilities are negatively significantly correlated with return on assets, non tax-sheilds and liquidity. The correlation analysis does not report an association between all leverage measures and capital expenditures at either the 1% or 5% levels of significance. Finally, beyond our set of hypotheses and as the one may assume, total book (market) leverage is significantly correlated at the 1% level with short-term book (market) leverage ratios.

4.4 Empirical Findings

In this section, the relation between foreign ownership along control variables and capital structure leverage measures are regressed. The outcome is as shown in Table 7 through Table 10. Statistics were pooled by using OLS, RE and FE regression models as described in Chapter 3. To spot the most appropriate model, we conduct the LM test to assess the random effect versus the pooled OLS model, and the Hausman specification test to contrast the FE versus the RE model. The product of our examination method is presented in Table 6, next.

Table 6. Lagrange Multiplier and Hausman tests

	T/ BLEV	T/MLEV	S/BLEV	S/MLEV
Lagrange multiplier test	439.96	313.40	375.47	298.05
Prob. Value	0.0000	0.0000	0.0000	0.0000
Hausman test	16.18	34.24	18.92	46.03
Prob. Value	0.0234	0.0000	0.0084	0.0000
Model specification	FE	FE	FE	FE

Notes: T/BLEV (T/MLEV) is book (market) leverage based on total liabilities. S/BLEV (S/MLEV) is book (market) leverage based on short-term liabilities.

Supported by the above results, the LM test statistics based on OLS residuals indicate that the null hypothesis of the OLS model ($\sigma_a^2 = 0$) against the random or fixed effects model ($\sigma_a^2 \neq 0$) was rejected at the 1% significance level for all leverage measures (equations 1 and 2). The Hausman test statistics indicate that the null hypothesis of no correlation between foreign ownership and control variables from one side and total market and short-term book and market leverage measures from the other is also rejected at the 1% level of significance. The same applies for book leverage based on total liabilities at the 5% level of significance. Based on these results, we conclude that the FE model is more appropriate than the OLS and RE models.

Table 7 presents the output for regressing foreign ownership and control variables against total book (market) leverage. Under the regression analyses of total leverage measures, the estimated coefficient on FRGN is negative and significant at the 5% level when regressed against book leverage. This result entails that Jordanian non-financial firms are able to reduce their total liabilities as foreign ownership share increases. This result supports the assumption that internationalization leads to higher agency costs (Burgman, 1996). The findings are also consistent with the explanation presented by Gurunlu and Gursoy (2010) who argue that firms attracting foreign capital acquire sufficient internal funds and are averse toward more external financing to support their investment projects. The resulted reverse relationship makes sense, as Jordanian firms can employ their generated retained earnings from previous investments financed by foreign investors to subsidize new projects. Advantages captured by foreign investments in Jordan, such as the exemption of fixed assets imported into the country from fees and taxes, may also enable the firm to reduce its borrowing levels[3] as suggested by Li *et al*. (2009). An alternative assumption is that a significant negative coefficient on FRGN found due to

[3] See "The Investment Promotion Law" no. (16) of 1995 and its amendments for the year 2000.

the negative relationship between international activity and leverage for firms headquartered in low volatility markets (Kwok and Reeb, 2000), such as Jordan (Erb *et al.*, 1996). Our findings are in the line of those reported by Kocenda and Svejnar (2002).

Table 7. Regression of total book (market) leverages on foreign ownership and control variables

	OLS		FE		RE	
1. Total book leverage						
FRGN	0.0391	(0.936)	–0.1250	(2.328*)	–0.0598	(1.333)
SIZE	0.0447	(5.762**)	0.0961	(5.073**)	0.0639	(5.433**)
ROA	–0.6289	(5.157**)	–0.2893	(3.717**)	–0.3354	(4.457**)
NDTS	–0.2920	(1.120)	0.0469	(0.302)	–0.0009	(0.006)
TNG	–0.1395	(3.665**)	–0.0365	(0.750)	–0.0767	(1.909)
CAPEX	0.0894	(1.007)	0.0526	(1.168)	0.0678	(1.535)
LIQ	–0.0392	(9.263**)	–0.0233	(7.434**)	–0.0259	(8.646**)
Constant	–0.2433	(1.803)			–0.6315	(3.127**)
Adjusted R^2	0.3253		0.8714			
F-statistic	31.238**		31.365**			
2. Total market leverage						
FRGN	0.0590	(1.500)	–0.0751	(1.153)	0.0378	(0.769)
SIZE	0.0332	(4.538**)	0.1717	(7.473**)	0.0657	(5.673**)
ROA	–1.0116	(8.795**)	–0.5290	(5.605**)	–0.6613	(7.420**)
NDTS	–0.1302	(1.261)	0.0185	(0.098)	–0.0770	(0.425)
TNG	–0.1337	(3.724**)	0.0330	(0.558)	–0.0714	(1.641)
CAPEX	0.0556	(0.664)	–0.0203	(0.371)	0.0182	(0.343)
LIQ	–0.0320	(8.016**)	–0.0121	(3.199**)	–0.0183	(5.216**)
Constant	–0.1168	(0.918)			–0.7433	(3.740**)
Adjusted R^2	0.3319		0.7895			
F-statistic	32.16**		17.798**			

Notes: Based on the Hausman test results, we estimate the regression models using the fixed effects specification. Each cell contains the regression coefficient and the absolute value of the t-statistic in parentheses. T/BLEV (T/MLEV) is book (market) leverage based on total liabilities, defined as a ratio of total liabilities to the summation of total liabilities and book value of assets (market value of equity), S/BLEV (S/MLEV) is book (market) leverage based on short-term liabilities, defined as a ratio of short-term liabilities to the summation of total liabilities and book value of assets (market value of equity), FRGN is foreign ownership as a percentage of shares owned by foreign shareholders, SIZE represents size of firm measured as the natural logarithm of total assets, ROA is return on assets used as a proxy for profitability level, NDTS denotes non-debt tax shields calculated as depreciation expense scaled by total assets, TNG is tangibility as a ratio of fixed assets to total assets, CAPEX is capital expenditures calculated through subtracting net fixed assets for the preceding year from net fixed assets for the current year plus depreciation all scaled by total assets, and LIQ denotes liquidity as a ratio of current assets to current liabilities. ** and * indicate significance at the 1 and 5% levels, respectively.

Since we now hold evidence on that the percentage of shares undertaken by foreign investors does indeed affect corporate financing decisions, our aim is to track the relationship

between foreign ownership and capital structure sub-measures of leverages based on short-term liabilities in order to restrict the underlying relationship only to those measures affected by the association. Table 8 illustrates the regression analyses outcome.

Table 8. Regression of short-term book leverage on foreign ownership and control variables

	OLS		FE		RE	
1. Short-term book leverage						
FRGN	0.0303	(0.940)	–0.1548	(2.994**)	–0.0687	(1.731)
SIZE	0.0140	(2.321*)	0.0572	(3.136**)	0.0245	(2.584**)
ROA	–0.3122	(3.307**)	–0.1791	(2.390*)	–0.2098	(2.952**)
NDTS	–0.1360	(0.674)	0.0363	(0.242)	0.0273	(0.189)
TNG	–0.2378	(8.069**)	–0.0602	(1.283)	–0.1396	(3.969**)
CAPEX	0.1393	(2.028*)	0.0132	(0.304)	0.0469	(1.112)
LIQ	–0.0410	(12.497**)	–0.0331	(10.960**)	–0.0351	(12.519**)
Constant	0.2151	(2.060*)			0.0020	(0.012)
Adjusted R^2	0.3638		0.8123			
F-statistic	36.860**		20.389**			
2. Short-term market leverage						
FRGN	0.0431	(1.381)	–0.1111	(2.064*)	–0.0010	(0.025)
SIZE	0.0107	(1.845)	0.1273	(6.703**)	0.0346	(3.771**)
ROA	–0.6683	(7.336**)	–0.3815	(4.890**)	–0.4766	(6.507**)
NDTS	0.0641	(0.329)	0.0228	(0.146)	–0.0154	(0.104)
TNG	–0.2103	(7.394**)	0.0404	(0.829)	–0.1033	(2.947**)
CAPEX	0.0951	(1.434)	–0.0540	(1.197)	0.0004	(0.009)
LIQ	–0.0334	(10.547**)	–0.0221	(7.038**)	–0.0262	(9.118**)
Constant	0.2105	(0.626)			–0.2491	(1.582)
Adjusted R^2	0.3526		0.7778			
F-statistic	35.149**		16.684**			

Notes: Based on the Hausman test results, we estimate the regression models using the fixed effects specification. Each cell contains the regression coefficient and the absolute value of the t-statistic in parentheses. T/BLEV (T/MLEV) is book (market) leverage based on total liabilities, defined as the ratio of total liabilities to the summation of total liabilities and book value of assets (market value of equity), S/BLEV (S/MLEV) is book (market) leverage based on short-term liabilities, defined as the ratio of short-term liabilities to the summation of total liabilities and book value of assets (market value of equity), FRGN is foreign ownership as a percentage of shares owned by foreign shareholders, SIZE represents size of firm measured as the natural logarithm of total assets, ROA is return on assets used as a proxy for profitability level, NDTS denotes non-debt tax shields calculated as depreciation expense scaled by total assets, TNG is tangibility as a ratio of fixed assets to total assets, CAPEX is capital expenditures calculated through subtracting net fixed assets for the preceding year from net fixed assets for the current year plus depreciation all scaled by total assets, and LIQ denotes liquidity as a ratio of current assets to current liabilities. ** and * indicate significance at the 1 and 5% levels, respectively.

Our results here indicate a significant negative impact of shareholdings by foreign investors on book and market leverage measures based on short-term liabilities at the

1% and 5% level of significance, respectively. The negative relation between foreign ownership and short-term liabilities ratio is consistent with Singh and Nejadmalayeri's (2004) findings suggesting a negative relation. Since Jordanian firms are characterized by family ownership and control, we disagree with the argument proposed by Rodrik and Velasco (1999) in which the researchers document that a high reliance on short-term debt is associated in part with high levels of corruption due to inadequate internalization of short-term borrowings risks. Our results are consistent with the predictions from Rajan (1992), Diamond (1993) and Demirguc-Kunt and Maksimovic (1999), where firms in emerging countries are likely not to rely on long-term debt when the legal system is inefficient or costly to use, and in line with the explanation presented by Brigham and Daves (2009) who state that firms which are in a weakened condition but with internal forecasts indicating greater financial strength in the future would be inclined to delay long-term financing of any type until things improved. Such firms are seen to be motivated to use short-term debt even to finance long-term assets, with the expectation of replacing the short-term debt in the future with cheaper, higher rated long-term debt.

Based on the results reported from the FE regression analyses, we find that firm size, return on assets, and liquidity to be significant in influencing capital structure. The coefficient on SIZE is positive and significant at the 1% level when regressed against all leverage measures. We argue that firms holding more assets are able to depend on external sources of funding to support their projects. This relationship sounds reasonable, since the lender usually uses the borrower firm's assets as an indicator for measuring the firm's ability to repay the debt. Such a scenario holds consistent with our findings with regard to total as well as short-term book and market leverages. The finding is consistent with the trade-off theory which assumes that larger firms tend to

have stronger borrowing capacity than do smaller firms. Large firms tend to be more diversified and less prone to bankruptcy (Rajan and Zingales, 1995), and are expected to incur lower direct costs in issuing debt or equity (Pandey, 2001). As those expectations imply, large firms found to employ higher amount of liabilities than smaller firms. Empirical studies by Al-Fayoumi and Abuzayed (2009) and Gurunlu and Gursoy (2010) do also support the positive relationship. Results for return on assets report a significantly negative relationship at 1% level with book leverage based on total liabilities and market leverage based on both total and short-term liabilities, while is holding a significant negative relation at 5% level when regressed against market leverage based on short-term liabilities. As predicted by the pecking order theory by Myers (1977), profitable Jordanian services and industrial firms proved to use less liability in their capital structure. Thus, we argue that high levels of each of the leverage measures in the capital structure composition would decrease a firm's profitability level. Our results are consistent with those offered by Gleason *et al*. (2000) and Booth *et al*. (2001). Finally, in line with the assumption proposed by the Pecking Order theory suggesting that firms with greater liquidities prefer to use internally generated funds, and consistent with the results of Sheikh and Wang (2011), we find a negative relationship between liquidity and all leverage measures.

Chapter 5: Conclusion and Recommendations

This research analyzes the effect of foreign ownership on capital structure decisions for listed services and industrial firms in Jordan during the period 2005-2009. Based on panel data methodology, the empirical results show negative statistically significant relationships between foreign ownership and total leverage based on book value of assets and short-term leverage based on each of book value of assets and market value of equity, suggesting that, firms with more shares held by foreign investors are likely to rely less on debt borrowings, because these firms generally hold higher retained earnings, and thus they are dependent on internal-funds to finance their projects. We argue that the observed heavy reliance on short-term liabilities questions the validity of corporate financing choices theories observed to have an explanatory power in developed countries.

It can be argued that only a limited number of the firms under investigation were found to have majority foreign ownership able to exert market power toward their preferences. Moreover, although this research does not aim to provide evidence on costs of debt related to the agency problem, in line with the idea proposed by Lee and Kwok (1988), Burgman (1996) and Doukas and Pentzalis (2003) on international diversification, we suggest that stock ownership by multinationals exposes the firm to a higher level of potential agency costs of debt, and that eventually lead the firm to reduce its reliance on long-term borrowings as a source of funding. While there are profound different financial and ownership dimensions found in Jordan than what is found in developed countries, the results of this study suggest that some of the insights from modern finance theory are portable to Jordan, portrayed by certain firm-specific factors that are relevant for explaining capital structure in developed countries such firm size, return on assets and liquidity are also relevant in Jordan. The outcomes of this research have important

contribution for the capital structure research, by providing evidence that supports the importance of ownership structures as determinants for modes of corporate financing.

The author recommends services and financial firms to use their monitoring capability over ownership structuring to control debt by promoting (restricting) foreign shareholdings when signs of short-term debt excessiveness (shortages) are detected. To extend our research idea, we recommend contrasting cost of debt and cost of equity. Further research on our subject studying financial firms is suggested.

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Appendix A: Services Firms Included in the Sample

1. Alia (The Royal Jordanian Airlines)
2. Arab International for Education and Investment, The
3. Arab International Hotels
4. Bilad Medical Services, Al
5. Bindar Trading and Investment
6. Consultant and Investment Group, The
7. Darwish Al-Khalili and Sons
8. Dawliyah for Hotels and Malls, Al
9. Enjaz for Development and Multiprojects
10. Faris National Company for Investment and Export, Al
11. International for Medical Investment
12. Irbid District Electricity
13. Isra for Education and Investment, Al
14. Ittihad Schools
15. Jordan Electric Power
16. Jordan Express Tourist Transport
17. Jordan Hotels and Tourism
18. Jordan International Trading Center
19. Jordan Investment & Tourism Transport (Alfa)
20. Jordan National Shipping Lines
21. Jordan Petroleum Refinery
22. Jordan Press and Publishing (Ad-Dustour)
23. Jordan Press Foundation (Al Ra'i)
24. Jordan Projects for Tourism Development
25. Jordan Telecom
26. Jordan Trade Facilities
27. Masafat for Specialized Transport
28. Mediterranean Tourism Investment

29 Offtec Holding Group

30. Petra Education Company
31. Philadelphia International Educational Investment
32. Salam International Transport & Trading
33. Sharq Investments Projects, Al
34. South Electronics
35. Specialized Jordanian Investment
36. Specialized Trading and Investment
37. Tajamouat for Touristic Projects, Al
38. Transport and Investment Barter Company
39. Unified Transport & Logistics Company
40. Zarqa Educational an Investment, Al

Appendix B: Industrial Firms Included in the Sample

1. Amana Agricultural and Industrial Investment
2. Arab Aluminum Industry (Aral)
3. Arab Center for Pharmaceuticals and Chemicals Industries
4. Arab Company for Investment Projects
5. Arab Electrical Industries
6. Arab Engineering Industries
7. Arab International Food Factories, The
8. Arab Pesticides and Veterinary Drugs Manufacturing, The
9. Arabian Steel Pipes Manufacturing
10. Century Investment Group
11. Comprehensive Multiple Projects
12. Dar Al-Dawa Development and Investment
13. Ekbal Printing and Packaging, Al
14. Eqbal Investment Company, Al
15. First National Vegetable Oil Industries
16. General Investment
17. General Lightweight Concrete Industries
18. General Mining
19. Hayat Pharmaceutical Industries
20. Industrial Commercial and Agricultural, The
21. International Ceramic Industries
22. Janoub Filters Manufacturing, Al
23. Jordan Cement Factories
24. Jordan Chemical Industries
25. Jordan Dairy
26. Jordan Paper and Cardboard Factories
27. Jordan Pipes Manufacturing, The
28. Jordan Steel
29. Jordan Sulpho Chemicals
30. Jordan Vegetable Oil Industries
31. Jordan Wood Industries (Jwico)
32. Jordan Worsted Mills, The
33. Jordanian Pharmaceutical Manufacturing, The
34. Middle East Complex for Engineering, Electronics and Heavy Industries
35. Middle East Pharmaceutical and Chemical Industries and Medical Appliances
36. Middle East Specialized Cables Company
37. National Aluminum Industrial
38. National Cable and Wire Manufacturing
39. National Chlorine Industries
40. National Poultry
41. National Steel Industry
42. Nutridar
43. Pearl Sanitary Paper Converting
44. Quds Ready Mix, Al
45. Ready Mix Concrete and Construction Supplies
46. Rum Aladdin for Engineering Industries
47. Travertine
48. Union Advanced Industries
49. Union Tobacco & Cigarette Industries
50. Universal Chemical Industries
51. Universal Modern Industries for Edible Oil
52. Zay Ready Wear Manufacturing, El

تأثير الملكية الأجنبية على هيكل رأس المال للشركات غير المالية: أدلة من سوق عمان المالي

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عروب صلاح التميمي

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ملخص

تختبر هذه الدراسة تأثير الملكية الأجنبية على القرارات التمويلية من منظور الحوكمة المؤسسية. لاستكشاف العلاقة الكامنة، تم تحليل البيانات لمجموعة من الشركات غير المالية (الخدمية والصناعية) المدرجة في بورصة عمان (ASE) خلال الفترة من 2005 إلى 2009 من أجل دراسة الآثار المترتبة للملكية الأجنبية على هيكل رأس المال في سياق الاقتصاديات الناشئة . تشير الأدلة العملية إلى أن الملكية الأجنبية ترتبط سلبا مع القيمة الدفترية لإجمالي الديون وكلا من القيمة الدفترية والقيمة السوقية للديون قصيرة الأجل مبينة أن الشركات ذات المساهمة الأجنبية تكون أقل اعتمادا على التمويل الخارجي. أظهرت النتائج أن هيكل رأس المال يتأثر بحجم الشركة ، ربحيتها، ومستوى سيولتها. هذه الدراسة تساعد المدراء الماليين والمستثمرين في تكوين فكرة عن هيكل الملكية (المحلية والأجنبية) المرتبط مع مجموعة مختارة من من أساليب التمويل، وفقا لتفضيلات كل شركة على حدة.